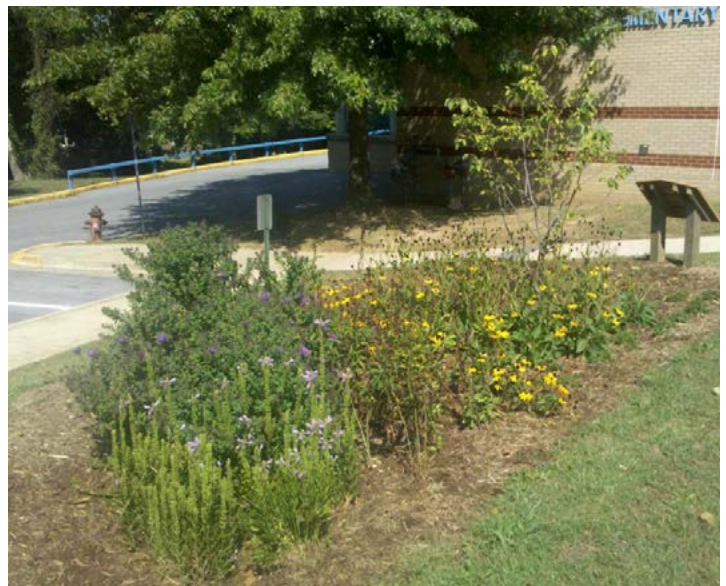




RainScapes

Environmentally Friendly Landscapes
for Healthy Watersheds

RainScapes for Schools Program



Montgomery County Public Schools

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What are RainScapes for Schools?

RainScapes are specially designed features in the landscape that reduce and filter rainfall. They help filter the pollutants that wash off pavement and rooftops, enter our streams, and degrade the water quality of our local streams and rivers.

RainScapes for Schools is a County Department of Environmental Protection program of the Watershed Management Division in accordance with the MS4 permit MOU with MCPS. Hands on stormwater education is brought to participating MCPS school sites and teachers in order to support curricular goals that address concepts such as: watershed health, reducing polluted rainfall runoff and enhancing local habitats. The County works closely with schools to select the technique that best suits the property and curricular goals. Factors like utilities, existing drainage patterns, tree cover and the amount of runoff that is going to an area are considered when choosing a RainScapes project for a school site in addition to maintenance and curricular goals.



By participating in the RainScapes for Schools program, MCPS sites augment their instructional settings and teach students how to be part of the solution to our existing water quality issues. Preventing pollutants, and too much stormwater, from entering local streams is needed to achieve healthy watersheds for all to enjoy. For MCPS sites with existing LID stormwater management, the RainScapes program and other DEP programs have resources to support curricular needs.



Why do we need RainScapes for Schools

School sites are highly developed, and the watersheds that support local streams are greatly altered. Buildings, roads, driveways and lawns have replaced much of the natural vegetation, forest cover, and soils that used to slowly filter rainwater. Development provides us with places to live, work, and play, but its hard surfaces prevent rainwater from soaking back into the ground and allow pollutants to enter local streams more easily. Schools provide a learning setting to educate students and their families about ways we can work to improve the health of our watersheds.

Rainwater falling on paved surfaces is directed to a storm drain where underground pipes transport it to local streams, along with pollutants the water picks up along the way. In suburban areas, even lawns can act like a hard surface if they are heavily compacted or do not drain well.

Many of the activities that you do on school properties directly affect the water quality of local streams. In addition to the amount of rainwater that may run off of the land, winter salt, and other pollutants, can pollute runoff that flows to local streams. Preventing pollution at its source is part of the solution to ensuring that the County achieves healthy watersheds. Collectively we can help by participating in RainScapes and taking other easy everyday steps to prevent pollution.

THE BIG PICTURE...

The County plans to improve stormwater treatment on 4,300 acres of paved land over the next five to ten years. That is a lot of ground to cover, and a variety of approaches are needed to meet this goal, given the extent of development in our county.

RainScapes is one program to help us meet that goal.

Just how big is 4,300 acres?

6.7 square miles. That's about the size of Wheaton, Maryland, or 3,307 football fields.

THE RAINSCAPES GOAL :

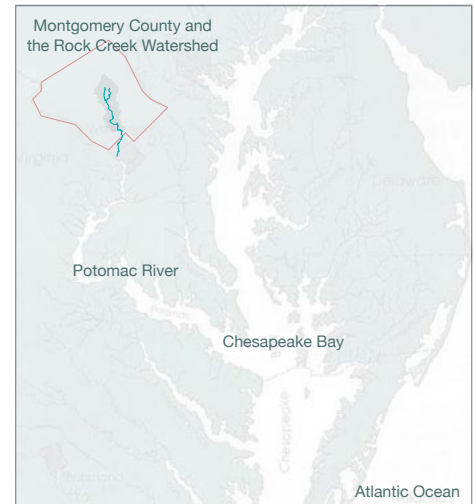
Control added to 50 impervious acres (or 38.5 football fields)

Introduction

Watersheds 101

A watershed is an area from which the water above and below the ground drains to a particular stream, river, lake, bay, or ocean. The watershed's boundary is defined by looking at the highest elevations surrounding a given stream or network of streams and using the ridgeline to define what waters would flow into that stream.

The County is divided into 8 subwatersheds, including Rock Creek. The relatively small watersheds within Montgomery County combine to form larger watersheds: all the land that drains into Rock Creek makes up the Rock Creek watershed. Rock Creek flows into the Potomac River, which flows into the Chesapeake Bay. The County has developed watershed implementation plans to help protect and restore these waterbodies and the RainScapes program is an integral part of these overall strategies for cleaner water.



Hands-on Stormwater Education

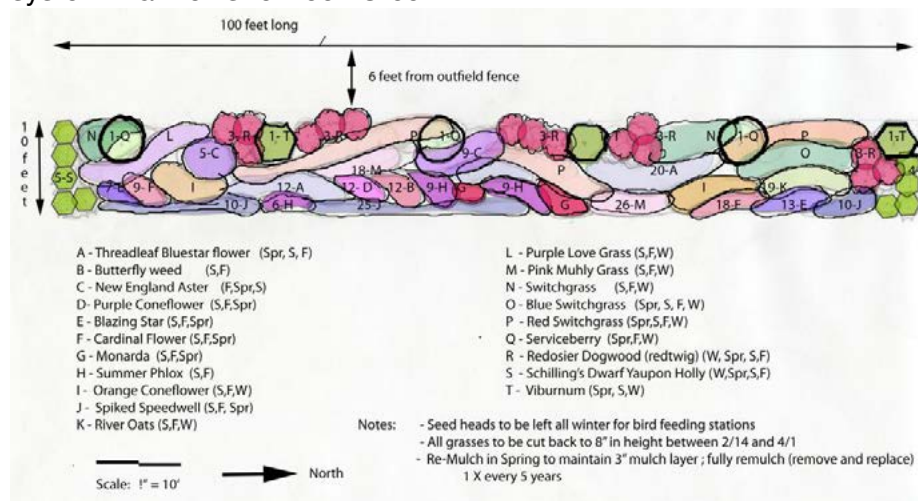
In addition to improving water quality, RainScapes projects can help educate the school community on ways to reduce energy and water consumption and improve air quality using sustainable landscaping practices.

Projects installed under the auspices of the RainScapes for Schools are intended to be small demonstration projects that can be maintained by the schools themselves, with some support from RainScapes. The RainScapes for Schools program is one way that DEP and MCPS are cooperating to meet our MS4 regulatory goals.



Sample Planting Plan from Rockville HS

1000 Square Foot Conservation Landscape that controls runoff from 2 acres of compacted baseball field before it runs into the stormdrain system that flows to Rock Creek



RainScapes Projects/ Techniques at MCPS Sites

Treatment Train Approach

- An incremental distributed approach to managing stormwater on-site
- Adds beautiful instructional opportunities to the property with possibly several types of techniques used to fully control the stormwater on-site.
- Works in the same manner as a healthy forest with the stormwater being intercepted, infiltrated, and/or evapo-transpired before a reduced amount of the rain fall is able to runoff.

Rain Gardens

- A shallow depression planted with native plants
- Collects, stores and allows rainwater from roofs, driveways, patios, or sidewalks to filter into the ground
- Adds beauty to the property, with maintenance that varies based on the plants you select
- Requires adequate space and well-draining soils

Conservation Landscaping: Replace compacted grass or invasive plant areas with soil improvements and native plants

- Many native plants are deeply rooted, and more resistant to insects, plant disease, and drought than non-native plants
- Reduces fertilizer, pesticide and watering costs, as plants are adapted to local climate
- Designed with a mix of native species to benefit the environment and provide an aesthetically pleasing space for people to enjoy- helps restore our local native plants

Tree Canopy

- Plant native trees, to provide increased canopy
- Trees reduce rainfall runoff: leaves capture rain before it hits the ground and roots soak up water
- Many environmental benefits: reduces cooling needs with increased shade, provides habitat, and improves air quality
- Long-term investment for relatively low cost with proper maintenance
- Removed from options in FY15 due to lack of interest

Curricular materials provided to schools

- Maintenance fact sheets provided by Stormwater Management Section for schools with facilities in place
- Participating schools Libraries provided with classroom sets of NFWF Chesapeake Bay Native Plant books
- Classroom educational PowerPoints provided to teachers as a resource for watershed health education
- Hands on workdays with participating schools
- Hands on workdays at the Smith Center with the Poolesville Global Ecology Program
- Development of high school growing program for green job experience in the HS Horticulture classes
- Coordination with MCPS Div. of Maintenance
- Project review during the construction process of modernization and additions with MCPS Div. Construction project managers
- Participation with MCPS Green Apple Day activities/ project coordination



RainScapes for Schools

Rainscapes for Schools Goals

Goal 1 - Provide hands on watershed stormwater education

- Educate by providing hands on opportunities on school sites
- Evaluate how healthy the schoolyard is using the RainScapes Schoolyard Report Card
- Determine what kind of projects can be done to reduce stormwater runoff on a school property

Goal 2- Implement landscaping projects to reduce runoff

- Use sustainable landscaping techniques, including rain gardens, conservation landscaping, and soil rehabilitation to achieve the maximum possible local infiltration of stormwater and remove pollutants from drainage to local streams.
- Support the siting, design and installation of small curricular projects on MCPS sites

Goal 3- Reduce impervious cover

- Reduce and modify impervious surfaces by making existing paved areas more pervious

Goal 4 - Increase awareness of green job opportunities through the high school level RainScapes Growing Program:

- Educate current students about local watershed health and the role of individual actions in achieving sustainable landscapes

Goal 5 - Increase tree canopy

- Educate students on the value of a healthy tree canopy for watershed health

Potential Project Partners:

PTA

Watershed Groups

School administration
and staff

Local Garden Clubs

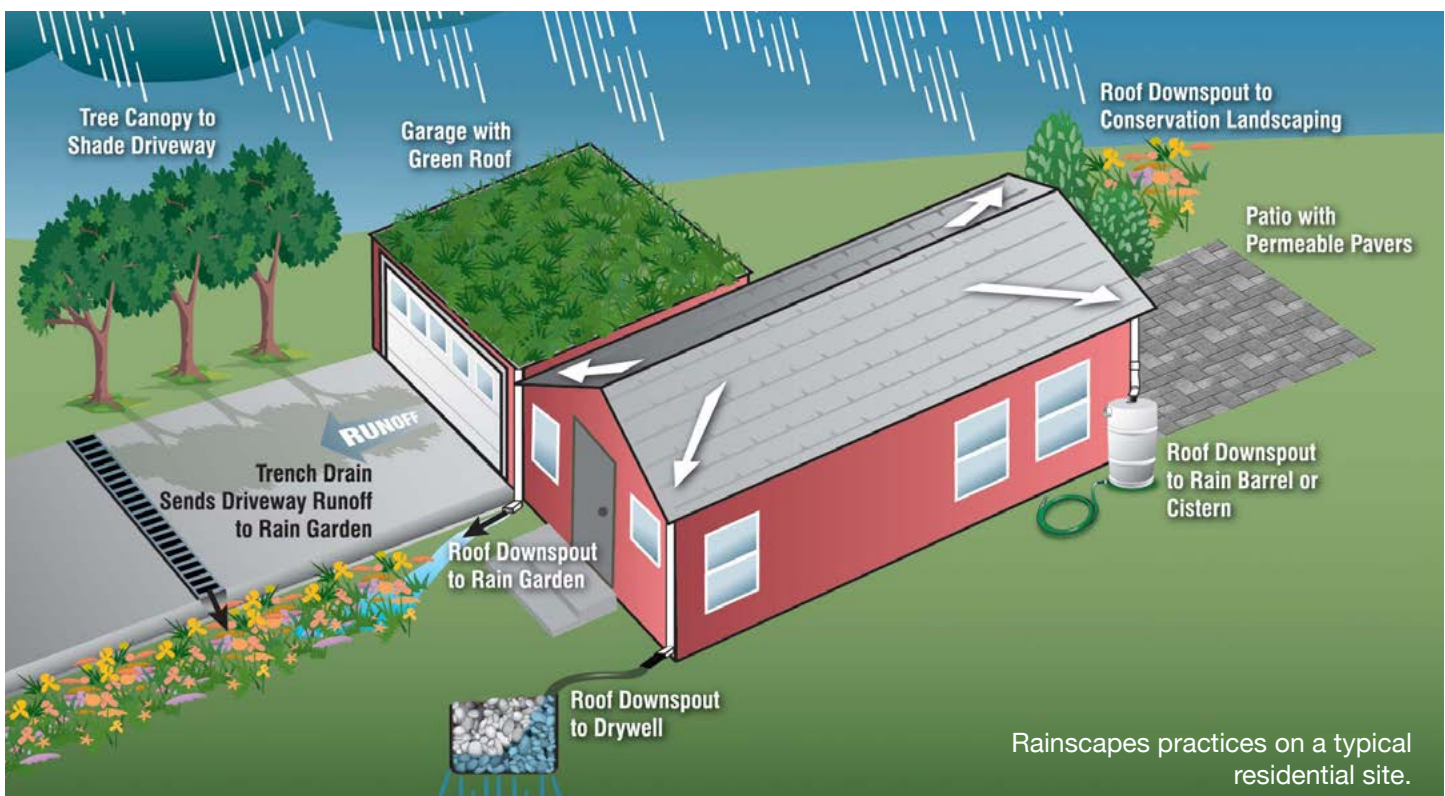
Scout groups

After School programs

Grants from other watershed
based groups

- Local landscape
contractors

- Local nurseries



Rainscapes practices on a typical residential site.

Working Together - DEP and MCPS

MS4 Permit Coordination

MOU - Drafted in 2010 to establish maintenance and retrofit working relationships to coordinate MS4 co-permittee work

RainScapes for Schools initiated in 2010

LID opportunity studies initiated by DEP Watershed Restoration

RS for Schools Growing program launched (High School only)



Schools Assessment for RainScapes Opportunities

- Site visit in response to school request
- Discuss goals/ walk the property
- Set site goal for runoff reduction
- Coordinate with agency and volunteer individuals

Who: MCPS Div. of Construction, MCPS Environmental Education, MCPS Maintenance Division, DEP Watershed Restoration section planners working on MCPS sites, and School level representatives



RainScapes for Schools Outreach

- Outreach to schools via MCPS Environmental Education network
- Letter to MCPS PTAs offering program
- Teacher training
- Direct contact with schools via the High School horticulture curriculum
- Speaking to schools at career day

Continue Outreach Efforts

- Focus on using a small built project as a hands on learning lab for a school
- Provide web based information

Who: DEP staff, watershed groups, MCPS Environmental Ed.

RainScapes Design Development

- Individual site assessments and consult with interested school
- Project design meetings
- MCPS Facilities modification form is submitted with project proposal to MCPS Div. Construction

Who: MCPS staff, MCPS PTSA volunteers, DEP staff, watershed groups, landscape architect or design consultant

Installed projects

- Installed projects are marked with a sign (DEP provides)
- Replacement plants provided if needed
- Limited maintenance assistance from DEP provided as needed
- Growing projects annual cycle produces plant

Who: DEP staff or consultants

Monitoring

- Post project follow-up annually

Who: DEP staff or consultants

Lessons Learned

The RainScapes for Schools program has been a pilot program since 2010 and has worked to meet five goals: hands-on watershed stormwater education, installation of small scale projects at MCPS sites, reduction in impervious area impacts at MCPS sites, education pertaining to watershed related green job opportunities available to high school and college graduates and to provide tree canopy educational content to interested MCPS schools. The runoff reduction goals and impervious area treated is shown in the table below.

The initial plan was to install small projects, on the order of 100-300 Square feet, which could be relatively easily sustained by a rotating cast of volunteers over time. However, from the very beginning, the requested project size has surpassed that target size in nearly every case. This has both positive and negative consequences, primarily for maintenance, for school projects. After evaluating each project over the past year, the program is being revised to reestablish the original size goals. For existing projects, we continue to work to partner with the schools and their volunteers to provide curricular guidance and intermittent maintenance support and training.

Also, in the interim, other programs within DEP have expanded their capacity to work with MCPS schools. Notably, the Division of Construction and the DEP Watershed Restoration and Construction Sections, Stormwater Maintenance Section and the Watershed Outreach Section have active roles and projects with MCPS schools that did not exist in 2009.

Further, tree planting has not been a type of project that MCPS schools have applied to RainScapes

to do. Moving forward, RainScapes for Schools is focussing on two project types: Rain Gardens and Conservation Landscapes. Tree planting project requests will be redirected to the DEP Tree program, as that program is focussed specifically on helping the County meet Canopy tree goals.



Pine Crest Elementary School Rain Garden - 2014



Sherwood High School Conservation Landscape - 2012

RainScapes at MCPS Schools: Runoff Reduction Report Card

| After 1 year: | After 3 years: | After 5 years: |
|--------------------------------|-------------------------------|-------------------------------|
| 2.23 impervious acres treated | 2.53 impervious acres treated | 3.31 impervious acres treated |
| 60,538 gallons / 1" rain event | 68,689 gallons/ 1" rain event | 89,891 gallons/ 1" rain event |

RainScapes for Schools Built Projects

Projects 2010-2015

Rockville HS- 2010

- 1000 SF Conservation Landscape filtering and cleaning runoff from 2 acres of Baseball field
- Well maintained, sign is in good condition
- DEP provided replacement plants from the RainScapes Growing program in Springs of 2011, 2012, 2013 and 2014
- DEP provided maintenance in Summer of 2014 and Spring of 2015; otherwise maintained by students and teacher
- Very well established, Coir logs are biodegrading, meeting to be scheduled with school staff as the lead teacher has retired and a new teacher has the project
- This is a very large project
- 87120 SF of Baseball field drainage to project



CURRICULARLY FOCUSED PROJECTS

**Poolesville Global Ecology
Work Days**

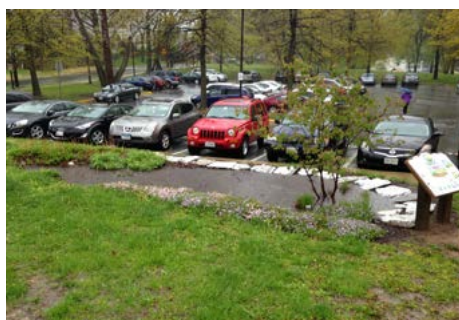
**MCPS Teacher training
on watershed health and
curricular gardens**

**RS Schools Growing Program
for MCPS HS Horticulture**



Pine Crest Elementary - 2010

- 100 SF Rain Garden filtering and cleaning runoff from sidewalk
- Well maintained, local garden club does most of the maintenance
- Originated as a Girl Scout troop/ Green club project
- Additional interpretive stepping stones added to berm
- Sign is in good condition
- DEP provided replacement plants from the RainScapes Growing program in Spring of 2013 & 2015
- This is a manageable size
- 500 SF of sidewalk drains to project.



RainScapes for Schools Built Projects

Projects 2010-2015

Sherwood HS- FY 2010-2012 :

1000 SF Conservation Landscape filtering and cleaning runoff from 1/2 acre of grassy area

- DEP provided replacement plants from the RainScapes Growing program in Springs of 2011, 2012, 2013 and 2014
- Very well established
- This is a very large project
- DEP provided maintenance in Summer of 2014, otherwise maintained by students and teacher
- Well supported by the efforts as part of the HS horticulture program at Sherwood High School and the afterschool Service Learning Hours students can earn
- edge plants damaged by oversalting by building services staff; replaced with more salt tolerant species
- sign is in good condition; continued issues with slope condition outside of the garden due to student foot traffic from athletic practices
- Drainage area of 2000 SF



Sherwood HS- FY 2010-2012 :

200 SF Rain Garden filtering and cleaning runoff from the parking area and access drive to the Sherwood Greenhouse.

- Well maintained,
- DEP provided replacement plants from the RainScapes Growing program in Springs of 2011, 2012, 2013 and 2014
- Maintained by students and teacher
- Oversalting by building services staff damaged entry plants; replanted with more salt resistant plants
- Very well established, thinning will be accomplished in the next year.
- 500 SF impervious area draining to garden



RainScapes for Schools Built Projects

Projects 2010-2015

Eastern Middle School FY 2010-2015 :

3000 SF of rain gardens filtering and slowing runoff

- Began as a Friends of Sligo Creek Grant funded project to address severe erosion and standing water problems at the school
- DEP provided a sign in 2009 to a project that was grant funded
- Very overgrown in 2010
- DEP provided materials and technical guidance annually 2010-2015
- DEP provided contracted maintenance in Summer of 2014 and 2015, otherwise maintained by students and building services
- The gardens have stabilized a previously eroding site
- In 2011 a significant amount of plants were removed and repositioned to make maintenance easier; the conservation landscape / Memorial Garden was reduced in size by 50%
- More plants were removed in 2013 when the rain garden near the front door was reorganized.
- Building services work with students on garden maintenance but tools and time are limiting factors
- DEP coordinated with MCPS Division of Construction and MCPS Division of Maintenance to address ongoing water issues on this site.
- RainScapes sign needs to be replaced and set at a lower level for improved access to all
- This is a very large project and new maintenance strategies involving seasonal mowing and garden size reduction are being explored, but the gardens are serving an important water control function
- 6500 SF impervious roof area draining to gardens



Partnerships at the school have included the Friends of Sligo Creek, and Neighbors of Northwest Branch

Landscape services have been donated by Snitzer Landscaping and Backyard Bounty and many Master Gardeners

<http://www.fosc.org/AL-EasternMiddle.htm> 2005-2009 details
<http://www.fosc.org/AL-RainscapesClub.htm>

RainScapes for Schools Built Projects

Projects 2010-2015

Rolling Terrace ES FY 2011 :

1500 SF Conservation Landscape filtering and cleaning runoff in a courtyard at the school

- DEP provided plants and installation oversight to a previously approved plan organized by KaBoom and the PTSA
- Existing clogged drains were exposed and cleaned and inlet areas were planted with filtering plants
- DEP provided replacement plants from the Growing program in 2013
- This courtyard appears to be being used for a variety of school gardening projects; due to summer construction in 2015, it was difficult to check before school began but it appears to need weeding.
- RainScapes staff plan to contact school in Spring of 2016
- 3200 SF of roof drains into this courtyard



Kingsview MS FY 2011 :

1000 SF Conservation Landscape No-Mow project

- DEP provided plants and soil amendments for initial planting and then more from the RainScapes Growing program in Spring of 2013
- Removed per order of new principal
- Great Grates, done in 2006, was a demoplanting project done by RainScapes to filter water around storm inlets. Two of seven gardens remain.



RainScapes for Schools Built Projects

Projects 2010-2015

Montgomery Blair HS FY 2012:

1500 SF Conservation Landscape

DEP provided site prep, plants and soil amendments for initial planting. Design was provided by a local landscape architect working with DEP. The project is largely maintained by High School students in their horticulture and environmental science classes with some weekend workday support and occasional DEP contractor support. Replacement plants have largely been provided via the RainScapes Growing program; Montgomery Blair is a participating school in that program.

The garden is well maintained and is well used by the classes.

1877 SF impervious area draining from sidewalks to garden



Loiderman MS FY 2013 :

200 SF Rain Garden and 1300 SF Conservation Landscape and tree planting project in cooperation with the local USGBC chapter Green Apple Day

- DEP provided plants and soil amendments for initial planting and then more from the RainScapes Growing program in Spring of 2013
- Trees were donated by Brickman
- All of the perennials in the conservation landscape are missing; either mowed/ removed or trampled by students
- Most of the shrubs in the conservation landscape area persist
- About 2/3 of the Rain Garden plants are OK
- Sign was not installed as directed and caused some of the maintenance issues by being in the wrong place
- Teacher lead left the school and no new school based effort has been in contact with RainScapes
- 10,000 SF of roof drains to this area



RainScapes for Schools Built Projects

Projects 2010-2015

Seven Locks ES FY 2013 :

1000 SF Conservation Landscape highlighting the plants of the Potomac River

DEP provided site prep, plants and soil amendments for initial planting

- PTSA led project
- Designed by a local Master Gardener
- Stepping stones protect the garden from compaction and orient garden visitors to the flow of the garden
- The Garden is an enhanced feature at the front door of the school
- Well maintained at the front of the school with the RainScapes sign posted and individual plants labeled
- Changed turf to conservation landscape



Sligo Creek ES FY 2013 :

1054 SF Conservation Landscape

DEP provided design, site prep materials, plants and soil amendments for initial planting

- PTSA led project
- Provided habitat education while reducing runoff from the previously compacted turf areas
- Focus on butterflies and other pollinators
- Well maintained
- Work continues via the USGBC Chapter Green Apple day with the Sligo ES PTSA
- 1000 SF impervious area draining to it
- Total drainage area to project is 2087 SF



RainScapes for Schools Built Projects

Projects 2010-2015

Sligo MS FY 2014 :

575 SF Conservation Landscape and pollinator garden

DEP provided design, site prep materials, plants and soil amendments for initial planting

- Green Apple Day project chapter of USGBC led project closely coordinated with MCPS Division of Construction
- Addressed erosion concerns in the courtyard; pavers and garden filter water before it enters the existing storm drain
- Very simple planting plan
- Garden maintenance appears to be within capability of school staff and students and parents.
- 2250 SF Impervious area draining to it

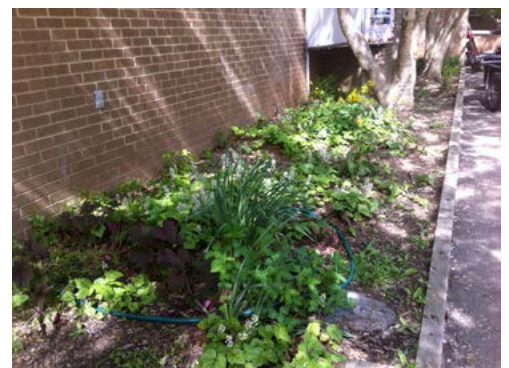


Rachel Carson ES FY 2014 :

2017 SF Courtyard Conservation Landscape

DEP provided project guidance, site prep materials, plants and soil amendments for initial planting

- Design provided by Gracefully Green
- Project initiated by PTSA and Muddy Branch Alliance Watershed Group
- Addressed erosion concerns in the courtyard; garden filters water before it enters the existing storm drain
- Maintenance is an ongoing challenge.
- 20,763 SF Impervious area draining to it



RainScapes for Schools

RainScapes High School Growing Program

Green job focus

The RainScapes for Schools Growing Program was initiated in 2010. The intent was to provide native plants to High Schools in Montgomery County that had Horticulture and/or Environmental Science courses. These plants provided hands on practice in growing the native plants that provide valuable eco-system services including stormwater and pollinator benefits.

Over the past six years, students and their teachers at the participating high schools have learned to grow native plants in their greenhouses. These plants are ones that have the ability to perform in rain gardens and conservation landscapes designed to slow, filter and absorb stormwater runoff. The program has augmented the newly developed MCPS environmental horticulture high school curriculum which allows students to get college credit if they complete a prescribed four course sequence. Clarksburg, Damascus, Montgomery Blair, Northwood, Paint Branch, Poolesville, Rockville and Sherwood High Schools have all grown plants. For a few years, Magruder High School also grew plants, as has the Montgomery College Landscape Technology program based in Germantown.

25% of plants produced by the high school and Montgomery College greenhouse programs are provided back to DEP for use as replacement plants in Stormwater facilities and RainScapes for Schools installed projects, outreach materials for Spring Conservation Landscape Classes and community group projects. A large number of plants each year have also been planted at the Smith Center as part of a Spring workdays project with Poolesville High School . The balance of plants are used by schools either as a product in their spring plant sales or for a school or watershed group sponsored project that the students can participate with.

This program has provided over 13,000 plants to the schools and has used the over 3500 plants returned for a wide range of outreach projects including a conservation landscape installed with GreenWheaton, Conservation Landscape training classes offered by RainScapes staff and for replacement plants for RainScapes for Schools projects and other Stormwater Maintenance ESD facilities.



Smith Center Partnership

The Lathrop E. Smith Center has several projects that have been undertaken in cooperation and partnership with DEP over the course of many years. The initial projects included two stormwater planter demonstration projects, cobble terraces to slow the flow of water and a planted depression near the picnic pavilion to filter and further slow the flow of water from the Smith Center site before it leaves to go into the streams on Montgomery County Park land.

The RainScapes team has used the Smith Center as training site for Landscape professionals to learn about the RainScapes/ LID/ ESD approach and for teachers and students to learn about ways to improve the local environment with small scale planted projects. Attendees have learned how to assess a site for ESD retrofitting and have contributed many valuable ideas for low cost solutions that have then been able, in part, to be implemented at the center. At the same time, Smith Center staff have been educated about their site and ways to guide their students to learn about watershed health and runoff impacts.

For the past five years, DEP RainScapes staff have worked closely with Smith Center staff, Poolesville High School Global Ecology program staff and students and Master Gardeners to provide two days of hands on education and maintenance for the Smith Center landscape. Ideas generated during the landscape professionals site assessment charette have been developed into on the ground solutions centered around planting and diversion strategies. An Eagle Scout project at the Center was sited, sized and installed based on the information generated from the professionals training at the site.

Other efforts by RainScapes have included participation in the development of the MCPS ONOW (Our Neighborhoods Our Watersheds) curriculum that is being piloted in the 4th and soon 6th grades in the MCPS system.



Tracking the Progress

RainScapes for Schools and MCPS Curricular Alignment

The RainScapes for Schools program of the Department of Environmental Protection (DEP-RSS) has added small scale stormwater management projects to 3.31 impervious acres on 13 MCPS school sites after 6 years of effort. The RainScapes projects are designed to provide educational opportunities for schools. Each project was paid for by DEP-RSS, and entailed coordination both with individual school sites and the MCPS Divisions of Construction and Maintenance to ensure that projects would meet the needs of both agencies.

The DEP-RSS program has worked closely with the MCPS Environmental Education Program to better adapt RainScapes projects to emerging curricular goals. The net result is that 13 MCPS School sites have some runoff reduction and local habitat improvements and enhanced hands-on educational opportunities for MCPS students. The RainScapes projects have been used by teachers for lessons around Science, Art, English and Geography/Social Studies. Although a small program, the RainScapes for Schools effort has proved to be a program that fits well with key components of the MCPS Environmental Sustainability Management Plan and other Curricular initiatives of MCPS.

| Fiscal Year | Project Name | Project Type | Project Footprint | Project Drainage Area | Impervious Area Treated | Inches of Rain Storage Capacity |
|-------------|---------------------|--------------|-------------------|-----------------------|-------------------------|---------------------------------|
| 2008 | Northwood 2* | RG (2) | 400 | 10,000 | 10,000 | 0.50 |
| 2009 | Rockville HS | CL | 1,000 | 86,000 | 87,120 | 1.00 |
| 2010 | Pine Crest ES | RG | 100 | 600 | 500 | 1.00 |
| 2010 | Rolling Terrace ES | CL | 1,500 | 3,200 | 3,200 | 1.00 |
| 2010 | Eastern MS | CL | 500 | 1,000 | 500 | 1.00 |
| 2011 | Sherwood HS | CL | 1,365 | 2,000 | 0 | 1.00 |
| 2011 | Kingsview 2 | CL | 1,000 | 1,000 | 0 | 1.00 |
| 2011 | Eastern MS | RG | 3,000 | 6,500 | 6,500 | 1.00 |
| 2012 | Montgomery Blair HS | CL | 1,500 | 1,877 | 1,877 | 1.00 |
| 2013 | Loiderman MS | RG | 1,500 | 11,000 | 10,000 | 1.00 |
| 2013 | Sligo Creek ES | CL | 1,054 | 2,087 | 1,000 | 1.00 |
| 2014 | Rachel Carson ES | CL | 2017 | 22,780 | 20,763 | 1.00 |
| 2013 | Seven Locks ES | CL | 1,000 | 1,000 | 0 | |
| 2014 | Sligo MS | CL | 575 | 2,250 | 2,250 | 1.00 |

CL = Conservation Landscape **RG** = Rain Garden

**The Northwood HS RainScapes projects are well maintained but predate the RainScapes for Schools program.*

Tracking the Progress

Highlighted below are a few key points of alignment between DEP RainScapes for Schools and MCPS. Moving forward, there are other opportunities for this type of collaboration between MCPS and MC-DEP, involving a broader range of programs of MC-DEP. Future efforts between MCPS and DEP could include materials for education centered around the larger stormwater management facilities, watershed education pertaining to trash and petwaste, as well as other sustainability initiatives of the Department of Environmental Protection.

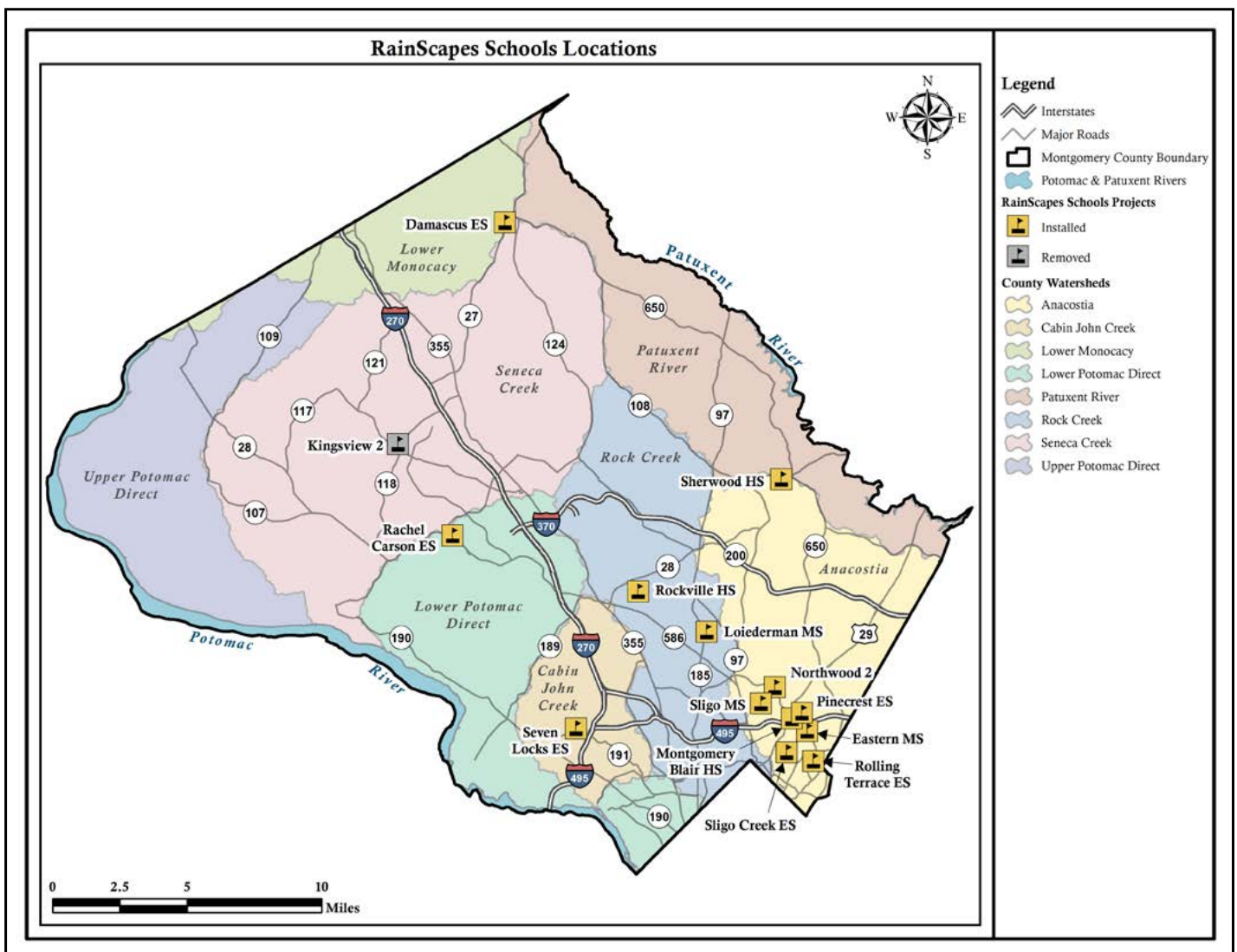
| | |
|--|---|
| MCPS Environmental Sustainability Management Plan, Stormwater Management Plan-on site goals/curriculum: | Students will deepen their understanding of solving complex issues related to environmental sustainability, while developing creative problem solving skills to solve real-world problems in the RainScapes Projects gardens and through the RainScapes Growing program. |
| | RainScapes have increased professional learning opportunities in content knowledge, instructional material and methodology in environmental literacy, partner with various community stake holders to provide professional learning for teachers around environmental sustainability. |
| MCPS Environmental Sustainability Management Plan-Student Education, Awareness and Actions: | At RainScapes Project School sites, RainScapes projects now ensure all students have an opportunity to engage in learning about the environment in a natural setting . |
| | RainScapes Projects and Growing Program increase student knowledge and engagement in environmental sustainability and sustainable practices. |
| | RainScapes projects expand the functional use of MCPS buildings and grounds as tools to support education for environmental sustainability and outdoor stewardship. |
| Curriculum 2.0: | All RainScapes Projects that are planted are installed using the approved school garden process and provide schools with resources to create native gardens and help teacher use gardens as classrooms for teaching across the curriculum. |
| | RainScapes further the development of a “green culture”, embedded through the formal and informal curricula, incorporate environmental stewardship through the formal curriculum, and daily attention to resource conservation. |
| At elementary and middle schools “Our Neighborhood, Our Watershed” (ONOW) Program: | Educational signs provided by RainScapes support the Reading Language goals of ONOW. |
| | The RainScapes Schoolyard Report Card supports ONOW initiatives targeting Social Studies-Geography, regions of Maryland, native habitats, and mapping the school yard |
| | RainScapes provides information to Schools regarding how these projects impact the environment. Specifically: Science-Water Quality, treatment train to drain, our role in the local watershed, schoolyard environmental impact. |

How Much Have We Done?

Summary

Montgomery County DEP RainScapes has been successfully working with MCPS to make a difference in water quality while also providing educational resources to MCPS schools. RainScapes for Schools provided plants to a number of the HS horticulture programs and installed projects in coordination with MCPS Division of Construction and Division of Maintenance.

In the past seven years, fourteen RainScapes projects that reduce stormwater runoff to our streams and rivers and provide curricular opportunities have been installed; one was removed by MCPS. As a result of RainScapes projects at MCPS school sites, 3.31 impervious acres for the first inch of runoff overall, while, at the same time, adding hands-on educational opportunities for students.



The map shown here identifies the locations of all the RainScapes School projects. These projects have added either a rain garden or conservation landscape to a school site. Additionally, one of the designed retrofit projects undertaken by DEP CIP group has been installed at Ridgeview MS, with others nearing time for installation at Argyle MS and other MCPS sites.



Pine Crest Elementary School Rain Garden full of runoff water



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